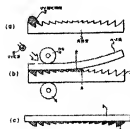


## English Abstracts of Japanese Laid-open Patent Publications

### 1. Japanese Laid-open Patent Publication No. 1989-86102

**PURPOSE:** To prevent the degradation in the quality of a lens by forming a lens pattern of an ionization radiation setting resin to one face of a base plate having ionization radiation transmittability.

**CONSTITUTION:** The base plate 1 having the ionization radiation transmittability is placed in the resin pool of the ionization radiation setting resin 2 and while the ionization radiation setting resin 2 is leveled off by means of press roll 4 via said base plate 1, the base plate 1 is laminated to the ionization radiation setting resin 2. The base plate 1 is then to laminated that only the end part on the roll 4 side comes into contact with a mold 3. The base plate 1 and the mold 3 are then pressurized and laminated by the rolls 4 from above the plate and below the mold to push out the air bubbles entering the resin inside and the valleys of the lens pattern shape of the mold. Furthermore, the ionization radiation setting resin 2 is cured by projecting ionization radiations thereon. The intrusion of the air bubbles into the lens part of the molded lens sheet is thereby obviated.



### 2. Japanese Laid-open Patent Publication No. 1989-302201

**PURPOSE:** To obtain the lens sheet having excellent optical characteristics and

mechanical characteristics by specifying the compsn. of a resin for molding the lens sheet.

CONSTITUTION: The resin compsn. prepd. by adding a slight amt. of a surfactant or release agent and antistatic agent to 20W70wt.% oligomer, 80W30wt.% mono mer and 0.1W5.0wt.% photoreaction initiator is used as the resin compsn. for forming the Fresnel lens sheet, lenticular lens sheet, etc. by curing thereof by ionization radiation. The lens sheet having the excellent optical characteristics such as transparency and ray transmittance and the excellent mechanical characteristics such as surface hardness, wear resistance, light resistance, and shape stability is obtd. in this way.

### 3. Japanese Laid-open Patent Publication No.1996-90663

PURPOSE: To obtain a low-cost lens sheet by charging ionizing radiation curable resin in an air gap, shielding the surface of a film including the uneven surface of a stamper with a mask, then pressurizing it, irradiating the resin of the periphery of the mask with radioactive rays, and irradiating the resin after the mask is removed with the rays to bond the film to the resin.

CONSTITUTION: Ionizing radiation curable resin 2 is charged on the uneven surface of a stamper 1, covered thereon with a transparent sheet 3 and further covered thereon with a mask 4. Thereafter, a laminated material 30 of the stamper 1 including the resin 2 to become the sheet and the sheet 3, the resin 2, the sheet 3 and the mask 4 is placed on a press surface plate, pressurized, excess resin is discharged from the periphery of the stamper 1, then the periphery of the mask 4 of the material 30 is irradiated with ultraviolet rays, and the resin 2 of the part is cured. The material 30 in which the mask 4 is removed is passed through an ultraviolet ray illuminator to cure the resin 2 of the uncured part (the uneven part of the stamper) and the cured resin and the transparent sheet are superposed on and adhered to each other.

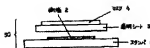


図10

#### 4. Japanese Laid-open Patent Publication No. 2003-342338

**PROBLEM TO BE SOLVED:** To provide a resin composition having excellent optical properties such as a high refractive index, excellent in restorability, scratch resistance and adhesiveness to substrates, which can fulfill various properties when used as an optical member (lens) such as a screen for a projection television or the like and also to provide a cured product thereof.

**SOLUTION:** The resin composition comprises a urethane(meth)acrylate obtained by reacting a bisphenol A polyalkoxy-diol, an organic diisocyanate and a hydroxy-containing mono(meth)acrylate and a bisphenol A epoxy(meth) acrylate as oligomer components, a phenoxy polyethylene glycol(meth)acrylate and a bisphenol A polyethoxy-diol di(meth)acrylate as monomer components and a photopolymerization initiator, having  $\geq 1.55$  refractive index after resin curing.

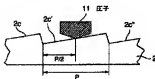


図11

#### 5. Japanese Laid-open Patent Publication No. 2004-4515

PROBLEM TO BE SOLVED: To provide a material for forming a fine rugged pattern, the material producing little deposit in a die, having excellent shape forming property and shape keeping property, and capable of duplication of a surface structure having a fine rugged pattern with high accuracy, and particularly, capable of accurate duplication of an extremely complicated fine rugged pattern in these years, and to provide a transfer foil having a fine rugged pattern, a method of forming a fine rugged pattern, an optical article, and a stamper.

SOLUTION: The material for forming a fine rugged pattern consists of a hardening resin composition having  $\geq 1 \times 10^7$  Pa dynamic storage modulus of elasticity at 30°C before hardening and having the dynamic storage modulus of elasticity in a temperature region from 60°C to 80°C as 0.008 to 0.8 time as the above value at 30°C.

#### 6. Japanese Laid-open Patent Publication No. 2004-59820

PROBLEM TO BE SOLVED: To provide a photosetting resin having excellent property to form an indented micropattern and other processabilities before curing, and capable of forming a cured coating film having excellent properties such as strength, hardness, heat-resistance, durability, flexibility and various other properties (especially heat-resistance and durability of the cured product), a photosetting resin composition containing the resin, a method for forming an indented micropattern by using the resin composition, a transfer foil, an optical article and a stamper produced by using the resin composition.

SOLUTION: The photosetting resin contains (a) a polymer containing a constitution unit having hydroxy group in the main chain skeleton, (c) a polymerizable compound at least having one hydroxy group and one photopolymerizable functional group and (b) an isocyanate compound having at least two isocyanate groups and bonding the polymer (a) to the compound (c).

7. Japanese Laid-open Patent Publication No. 2004-59822

PROBLEM TO BE SOLVED: To provide a photocurable resin which, before curing, excels in the ability of forming a fine concave-convex pattern and other processing suitability and which can form a coating film having excellent post-cure properties in strengths, hardness, heat resistance, flexibility, or other points (particularly heat resistance and durability after curing); to provide a photocurable resin composition containing the resin; to provide a method of forming a fine concave-convex pattern using the resin composition; to provide a transfer foil using the resin composition; to provide an optical article; and to provide a stamper.

SOLUTION: The photocurable resin is that in which, a polymerizable compound (b) at least having one hydroxy group and one photopolymerizable functional group is linked through urethane bonding onto a polymer (a) that contains a constituting unit having an isocyanate group in the main chain scaffold or onto at least a part of the isocyanate group of the above polymer (a) through the hydroxy group of the polymerizable compound (b).

8. Japanese Laid-open Patent Publication No. 1996-34023

PURPOSE: To provide a very thin-wall molding by injecting a radiation setting resin and a radiation permeable filler in a prescribed amount at a prescribed injection pressure into a mold whose one side is formed of a radiation permeable material and completely filling a thin-wall part in the mold with the resin and the filler and curing the radiation setting resin by radiation.

CONSTITUTION: A radiation setting resin and a radiation permeable filler are injected as liquid in a ratio of 0-1000 pts.wt. filler to 100 pts.wt. resin at a injection pressure of  $\leq 100\text{kg/cm}^2$  resin pressure into a mold made of glass. At least one side of the mold is formed of the radiation permeable material. In such a way, even a thin-wall part in the mold is sufficiently filled with the resin and the filler by injecting the liquid at a low pressure. The liquid in the mold is irradiated by radiation such as a

lamp through the permeable part of the mold. The radiation setting resin in the mold is cured in a short time. Therefore, a very thin-wall molding is produced without a warpage and deformation and strength of the mold is made small.

